

CLAIMS

1. A pharmaceutical pig for transportation of a radiopharmaceutical in a syringe, the pig comprising:
an elongate base characterized by an inner and outer shell of the base completely enclosing a base shielding element;
an elongate cap removably attached to the base, the cap characterized by an inner and outer shell of the cap completely enclosing a cap shielding element, wherein the pig is characterized in that a portion of the cap shielding element overlaps a portion of the base shielding element.
2. The pig of claim 1, further including a flexible sleeve, at least a portion of which is transparent, removably disposed about the outer shell of the base.
3. The pig of claim 2, further including a label disposed between the flexible sleeve and the outer shell of the base.
4. The pig of any preceding claim, wherein the base shielding element and the cap shielding element are formed from lead.
5. The pig of any of claims 1-3, wherein the base shielding element and the cap shielding element are formed from a metallic-filled polymer composite material.
6. The pig of any preceding claim, wherein the inner and outer shell of the base are formed from stainless steel and are welded together to hermetically enclose the base shielding element to prevent contamination of the base shielding element, and the inner and outer shell of the cap are also formed from stainless steel and are welded together to hermetically enclose the cap shielding element to prevent contamination of the cap shielding element.
7. The pig of any preceding claim, further comprising a plurality of keyhole-shaped slots defined in the cap, wherein the slots sized and arranged to receive a plurality of screws extending from the base to removably lock the cap to the base when at least one of the cap and base are rotated to engage the screws in the keyhole-shaped slots.

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8. The pig of any preceding claim, wherein a hollow center section of the base is sized to accommodate a needle and at least a portion of a barrel of a syringe, and a hollow center section of the cap is sized to accommodate at least a portion of a plunger of the syringe.
9. The pig of claim 8, wherein the syringe is selected from the group consisting of conventional syringes and safety syringes.
10. The pig of claim 8, further including a removable inner liner sized to slip into the hollow center section of the base, wherein the inner liner is sized and arranged to surround a needle and at least a portion of a barrel of a syringe.
11. The pig of any of claims 4-10, further including a flexible sleeve, at least a portion of which is transparent, to slip on and off at least a portion of the base to removably secure a label to the base.
12. The pig of any preceding claim, wherein the base shielding element is tapered near a syringe needle-accommodating portion of the pig, and the cap shielding element is of generally uniform thickness.
13. The pig of any preceding claim, further comprising means for enabling a bayonet-type interconnection of the cap and the base.
14. The pig of any of claims 7-13, wherein the inner and outer shell of the base are formed from stainless steel and are welded together to hermetically enclose the base shielding element to prevent contamination of the base shielding element and the inner and outer shell of the cap are also formed from stainless steel and are welded together to hermetically enclose the cap shielding element to prevent contamination of the cap shielding element.
15. The pig of any of the preceding claims, further comprising an elastomeric ring compressed between the cap and base, and a plurality of keyhole-shaped slots in the cap sized and aligned to receive a plurality of screws extending from the base to removably lock the cap to the base when

the cap and base are rotated in opposite directions to engage the screws in the keyhole-shaped slots.

16. The pig of any preceding claim, wherein a portion of the base shielding element is disposed about a portion of the outer shell of the cap.

17. (Cancelled)

18. The pig of claim 1, wherein:

the inner and outer shell of the base are formed from stainless steel, and a hollow center section of the base is sized to accommodate a needle and at least a portion of a barrel of a syringe;

the inner and outer shell of the cap are formed from stainless steel, and a hollow center section of the cap is sized to accommodate at least a portion of a plunger of a syringe;

the cap shielding element has a generally uniform thickness;

the base shielding element is tapered in thickness near a portion of the hollow center section of the base that is sized to accommodate the needle; and

the base and cap include means for enabling a bayonet-type interconnection of the cap with the base.

19. A method of using the pig of any of the preceding claims, the method comprising:

placing a syringe containing a radiopharmaceutical in the pig;

transporting the pig containing the syringe to a medical facility;

ejecting the radiopharmaceutical from the syringe after the transporting step;

disposing the syringe in the pig after the ejecting step; and

transporting the pig and the syringe away from the medical facility for disposal of the syringe after the disposing step.

20. The method of claim 19, wherein the syringe is selected from the group consisting of conventional syringes and safety syringes.

21. The method of claim 19 or 20, further comprising disposing an inner liner within a hollow center section of the base of the pig.

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22-23. (Cancelled)

24. The method of claim 19 wherein the syringe comprises a safety syringe, the method further comprising converting the safety syringe into a self-contained biohazard container after the ejecting step, wherein the transporting step comprises transporting the pig and the self-contained biohazard container away from the medical facility for disposal of the self-contained biohazard container.

25. The method of any of claims 19-24, further comprising interconnecting the cap and the base of the pig prior to transporting the pig to the medical facility and after the placing step, wherein the interconnecting step comprises rotating at least one of the cap and the base relative to the other only a portion of a complete turn.

26. The method of any of claims 19-25, further comprising:

dissociating the cap from the base of the pig after transporting the pig to the medical facility and prior to the ejecting step, wherein the dissociating step comprises rotating at least one of the cap and the base relative to the other only a portion of a complete turn; and

interconnecting the cap and the base of the pig prior to transporting the pig away from the medical facility and after the disposing step, wherein the interconnecting step comprises rotating at least one of the cap and the base relative to the other only a portion of a complete turn.

27. The method of any of claims 19-26, further comprising slipping a flexible sleeve, a portion of which is substantially transparent, about at least a portion of the outer shell of the base.

28. The method of claim 27, further comprising disposing a label between the flexible sleeve and the outer shell of the base.